GALLAGHER ROBERTSON

www.glink.com

GLINK FOR WINDOWS

Compatible with Windows 7

Windows 8 Compatible

Robust, reliable, trusted and complete

Historical perspective

Glink is probably the only terminal emulator on the market with an unbroken development and support chain from a single company for more than twenty years. There are more than 600.000 copies of Glink licensed world wide for use as terminal emulators in the Bull, IBM, DEC, UNIX, Linux and Minitel environments.

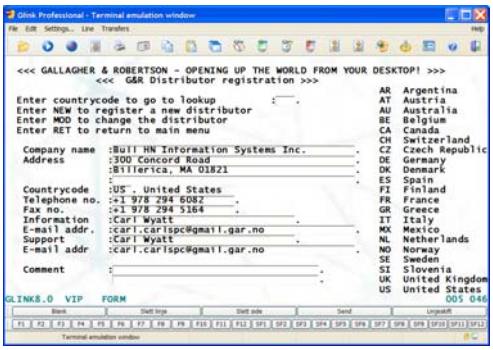
The forerunner of Glink was developed on a Commodore VIC 20 in 1981. It was ported to the Commodore 64 in 1982. Glink was introduced commercially as Glink for DOS running under DOS 2.10 in 1984. Glink for Windows, Standard Edition was first released for Windows 3.1 in July 1992, but is now discontinued. The Professional Edition was first released for Windows 95, NT4, 98, 98SE, 2000 and ME in December 2000. It is certified for Windows 8 but runs on all supported Windows releases, including Windows Server 2012, on both 32-bit and 64-bit platforms. The Professional Edition, with the accompanying Enterprise Edition is the platform for all future development.

Functional overview

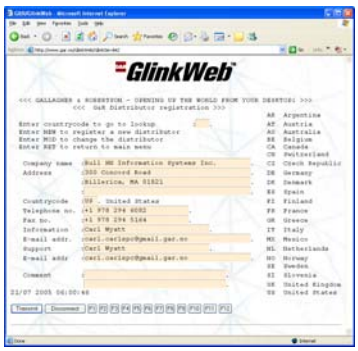
Glink is a package for terminal emulation. It has Bull VIP7700, VIP7760, VIP7800, VIP8800, HDS, Questar DKU7107, DKU7211, DKU7102; IBM 3270 with GDDM graphics and APL keyboard, IBM 5250; IBM 3151, VT52, VT100, VT220, VT320, VT340, VT420 with Regis graphics, ANSI, Prestel and Minitel emulations. It supports file transfer with the FTP, Kermit, Zmodem, IND$FILE and Bull UFT (Unified File Transfer) protocols. It provides integration with other Windows applications, standard or user-written. As well as its own powerful script language it supports COM+, OLE Automation, UVTI, HLLAPI and EHLLAPI. Glink includes an OLE Automation Object and a COM+ or .NET component for integrating e-business applications with your legacy applications. Communication protocols include G&R/Direct GCOS Access and G&R/Ggate for Bull, as well as TNVIP, TN3270, TN3270E, TN5250 TN5250E and Telnet. All Glink TCP/IP protocols can be secured using a choice of Secure Socket Layer (SSL) or Secure Shell (SSH) encryption and authentication protocols.

Workstation, web or application server, Glink is a complete solution

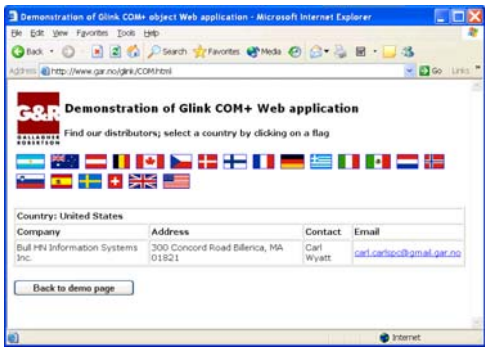
Glink can be run as a freestanding Windows workstation application, installed and configured on individual workstations, but it can also be run as a Windows workstation application that is installed, updated, configured and controlled centrally from a web server, with no end-user intervention. Alternatively, Glink can be installed on a Microsoft Internet Information Server to web-enable legacy applications running on mainframe systems, with no changes at all to the legacy application. All the end users need is a browser; no other workstation software installation is necessary. Individual legacy application screens can be facelifted using ASP.NET pages to enhance web-enabled operation. Finally, Glink can be installed on an MS/IIS Application server to make legacy applications available in the form of a COM+ or .NET object to server side applications in three-tier architectures.



Glink for Windows



GlinkWeb


Demonstration of Glink COM+ Web application
Find our distributors; select a country by clicking on a flag
Back to demo page

Glink server-side application

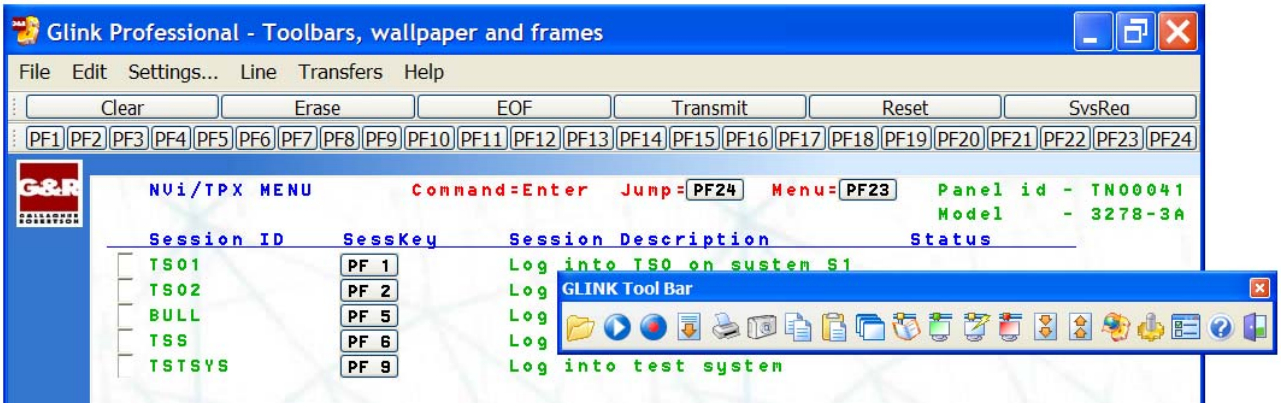
Windows is a trademark of the Microsoft group of companies

A state of the art terminal emulator

A 21st century look and feel

The look and feel of Glink Professional Edition is completely configurable, by the administrator or by the end user (unless locked by the administrator). You can customize the look and feel of Glink to emphasize your company profile, or to increase the efficiency of the user interface to the legacy applications on your mainframe.

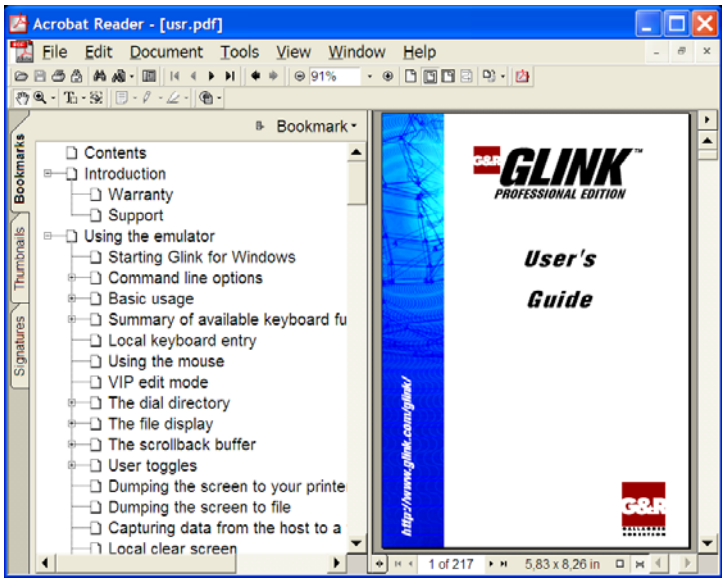
Here you see an IBM 3270 emulation screen configured with wallpaper. You can vary wallpaper to emphasize the difference between your legacy applications, or use the same wallpaper for all applications to reinforce the cohesion of your legacy applications. The screen has been configured to use 3-dimensional display for the variable fields, avoiding the flat 'green screen' effect associated with legacy applications. It has been configured with a frame with its own wallpaper as background at the left and top margin of the emulation screen. The frame has been used to display a company logo in order to emphasize the company profile for the application users. It could be used to tie the presentation of the legacy applications more closely to the company web pages by adding images or graphics.


Glink Professional - Toolbars, wallpaper and frames
File Edit Settings... Line Transfers Help
Clear Erase EOF Transmit Reset SysReq
PF1 PF2 PF3 PF4 PF5 PF6 PF7 PF8 PF9 PF10 PF11 PF12 PF13 PF14 PF15 PF16 PF17 PF18 PF19 PF20 PF21 PF22 PF23 PF24
NUi/TPX MENU
Command=Enter
Jump=PF24
Menu=PF23
Panel id - TN00041
Model - 3278-3A
Session ID
SessKey
Session Description
Status
TSO1 PF 1 Log into TSO on system S1
TSO2 PF 2 Log
BULL PF 5 Log
TSS PF 6 Log
TSTSYS PF 9 Log into test system
GLINK Tool Bar

The screen has been configured with a function key toolbar and emulation keyboard toolbar. The toolbars are configured to be floatable, and have been docked at the top of the screen. They can be docked at the bottom of the screen, or they can be left floating anywhere on the desktop, even outside of the emulation window, as is illustrated here, with the Glink toolbar. The efficiency of the user interface has been enhanced by automatically converting screen texts such as **PF 1** to 'hot spots', i.e. buttons that can be clicked to reach legacy application features. Arbitrary texts can be converted to buttons that start macros.

State of the art documentation

The documentation is available in Acrobat® format for download from http://www.glink.com free of charge.



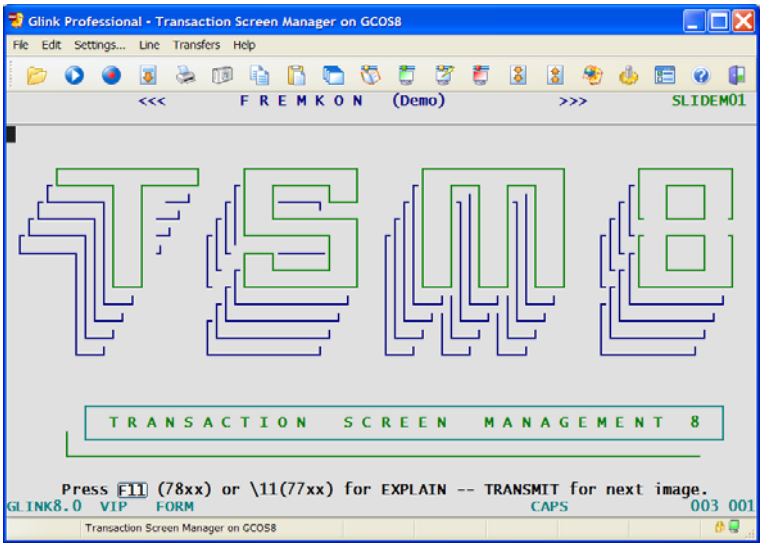
One product for all environments

There are more than 600,000 copies of Glink licensed world wide for use as terminal emulators in the Bull, IBM, DEC, UNIX, Linux and Minitel legacy application environments. Glink is also used for general communications work. A whole new market for controlling remote devices using TCP/IP connections has opened up, where the Glink script language is a winner in allowing intelligent automation of routine tasks such as collecting statistics.

Bull emulations

For the Bull legacy application environment Glink emulates VIP7700, VIP7760, VIP7800, VIP8800, HDS7 and Questar DKU7107, DKU7211 and DKU7102 terminals.

Bull VIP and HDS emulations

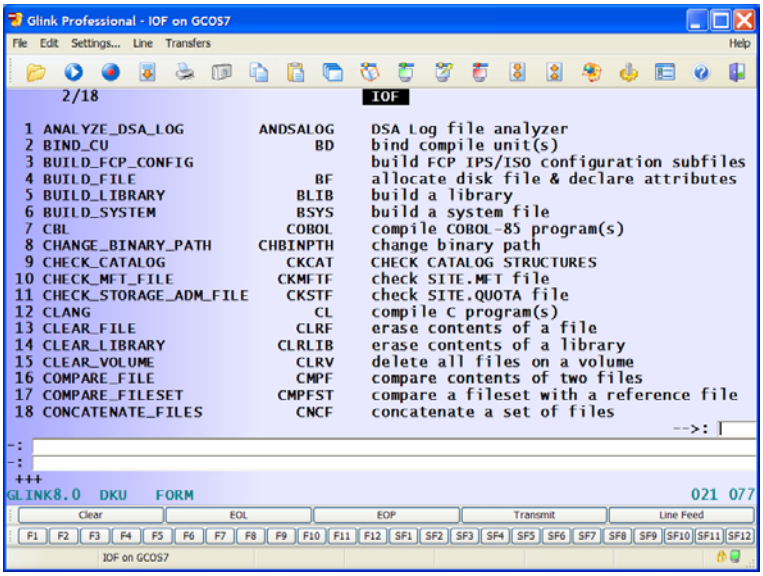

Glink Professional - Transaction Screen Manager on GCOS8
File Edit Settings... Line Transfers Help
<<< F R E M K O N (Demo) >>> SLIDEM01
TRANSACTION SCREEN MANAGEMENT 8
Press F11 (78xx) or \11(77xx) for EXPLAIN -- TRANSMIT for next image.
GLINK8.0 VIP FORM CAPS 003 001
Transaction Screen Manager on GCOS8

The VIP7800, VIP8800 and HDS7 emulations include both 132 columns and 72-line scroll mode.

They include support for TSM8 local forms, enabling huge performance gains for TSM8 applications.

For the programmers and systems people using command line Time-Sharing, Glink supports command recall (edit mode), and this is extended to apply in text mode, as well as the normal TX-Ret mode.

Bull Questar DKU emulations

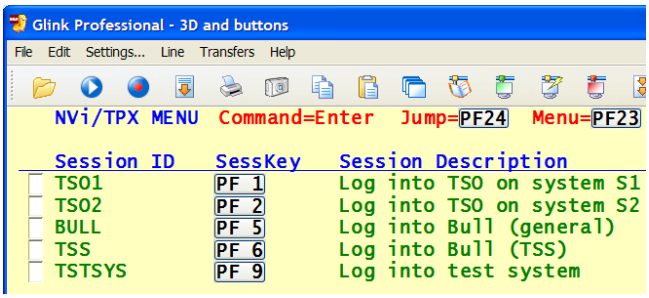

Glink Professional - IOF on GCOS7
File Edit Settings... Line Transfers Help
2/18 IOF
1 ANALYZE_DSA_LOG ANDSALOG DSA Log file analyzer
2 BIND_CU BD bind compile unit(s)
3 BUILD_FCP_CONFIG build FCP IPS/ISO configuration subfiles
4 BUILD_FILE BF allocate disk file & declare attributes
5 BUILD_LIBRARY BLIB build a library
6 BUILD_SYSTEM BSYS build a system file
7 CBL COBOL compile COBOL-85 program(s)
8 CHANGE_BINARY_PATH CHBINPTH change binary path
9 CHECK_CATALOG CKCAT CHECK CATALOG STRUCTURES
10 CHECK_MFT_FILE CKMFTF check SITE.MFT file
11 CHECK_STORAGE_ADM_FILE CKSTF check SITE.QUOTA file
12 CLANG CL compile C program(s)
13 CLEAR_FILE CLRF erase contents of a file
14 CLEAR_LIBRARY CLRLIB erase contents of a library
15 CLEAR_VOLUME CLRV delete all files on a volume
16 COMPARE_FILE CMPF compare contents of two files
17 COMPARE_FILESET CMPFST compare a fileset with a reference file
18 CONCATENATE_FILES CNCF concatenate a set of files
-->:
GLINK8.0 DKU FORM 021 077
Clear EOL EOP Transmit Line Feed
IOF on GCOS7

Glink's Questar DKU7107 and DKU7211 emulations include TCS local forms, enabling huge performance gains for applications using the local forms support of TDS.

For the programmers and systems people using command line IOF, Glink supports VIP-style command recall (edit mode), and this is extended to apply in text mode for the DKU emulations.

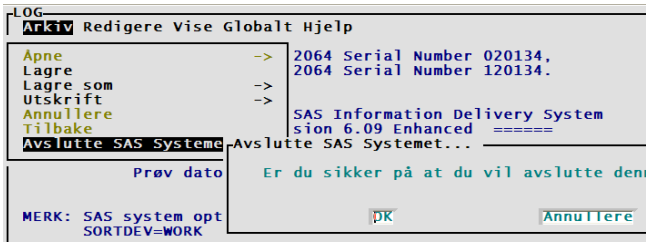
Glink has also the asynchronous DKU7102 emulation.

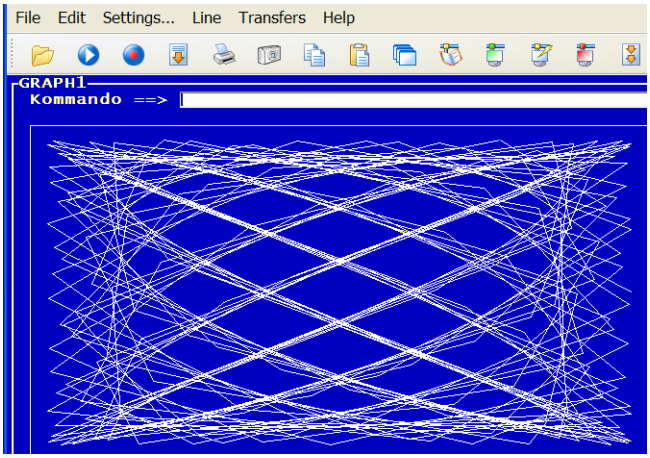
IBM 3270 emulation


Glink Professional - 3D and buttons
File Edit Settings... Line Transfers Help
NVi/TPX MENU Command=Enter Jump=PF24 Menu=PF23
Session ID SessKey Session Description
TSO1 PF 1 Log into TSO on system S1
TSO2 PF 2 Log into TSO on system S2
BULL PF 5 Log into Bull (general)
TSS PF 6 Log into Bull (TSS)
TSTSYS PF 9 Log into test system

You don't need to work with IBM legacy application 'black screen' look and feel. The Glink SAA-compliant IBM3270 emulation can be configured with the Glink Professional Look and Feel, including 3D variable fields. Glink can convert text fields such as 'PFnn' into on-screen buttons that transmit the key sequence to the mainframe, or an arbitrary text can be a button that fires a macro that can execute any Glink function, even start a script.

The Glink IBM 3270 emulation supports graphics, used in various ways. The built-in alternate character set can be used to display line graphics. Glink supports the extra character set, and draws line graphics correctly.



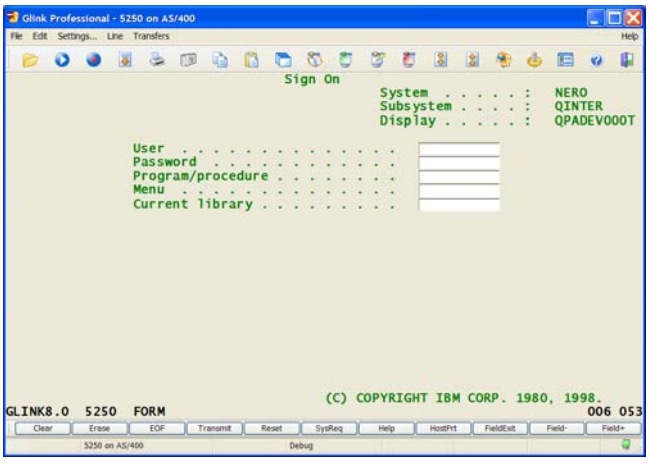


The most advanced IBM legacy applications use vector graphics. Glink Professional supplies all the commands needed to produce 3179G graphics including (but not limited to) use of 16 colors, text output, line drawing, shapes with fill effects and predefined markers. This enables Glink to display screens containing elaborate graphic images.

IBM 5250 emulation

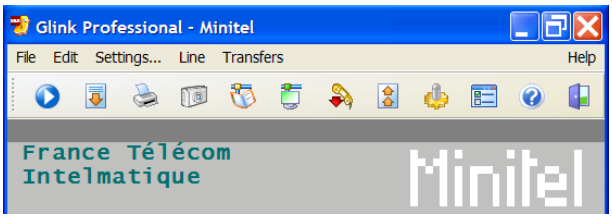
The Glink Professional IBM 5250 emulation can also be enhanced using the Glink 'Look and Feel'. Here the traditional IBM legacy application 'black screen' has been enhanced using the Glink 3D effect for variable fields. An emulation keyboard toolbar has been added at the bottom of the screen.

Glink can be used to run all normal 'data processing' style legacy applications on an AS400 system.


Glink Professional - 5250 on AS/400
Sign On
System . . . . . : NERO
Subsystem . . . . : QINTER
Display . . . . . : QPADEV000T
User . . . . . .
Password . . . . . .
Program/procedure . . . . . .
Menu . . . . . .
Current library . . . . . .
(C) COPYRIGHT IBM CORP. 1980, 1998.
GLINK8.0 5250 FORM
006 053

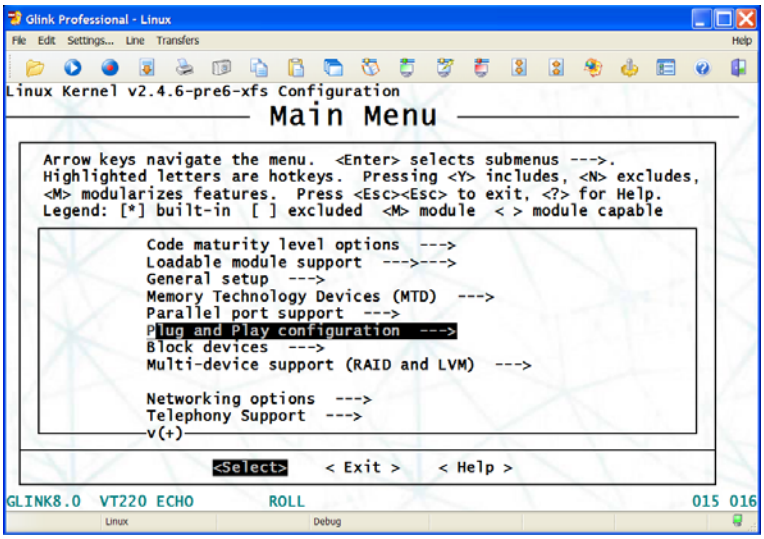
Open systems emulations

Glink is widely used outside of the traditional legacy application environment.



Glink includes an updated Minitel emulation that gives access to hundreds of services available to Minitel terminal users in the French market.

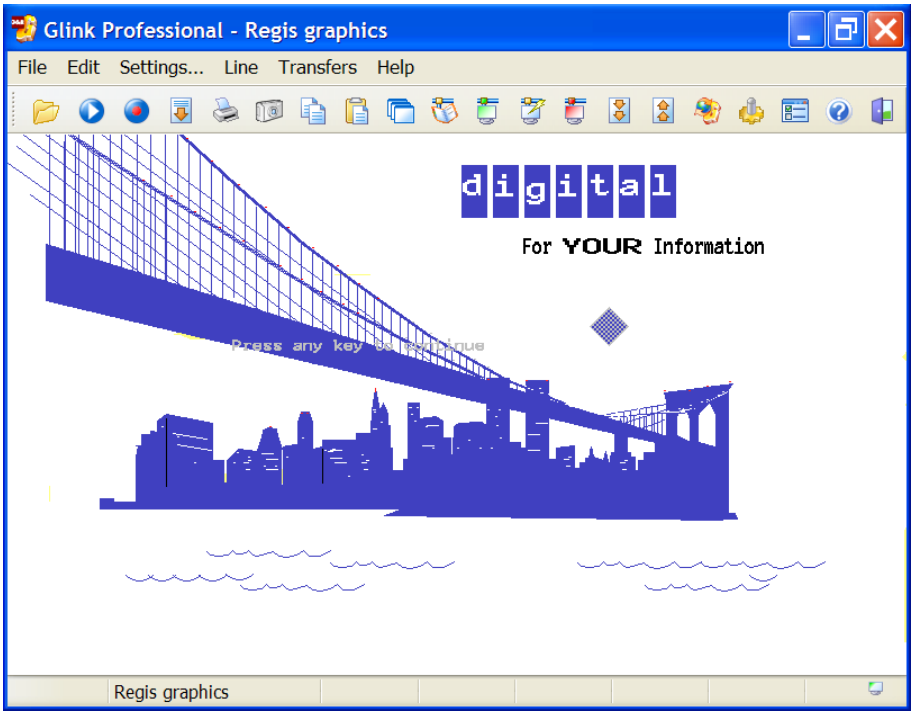
The Prestel emulation is maintained, but not enhanced, due to few Viewdata systems.


Glink Professional - Linux
Linux Kernel v2.4.6-pre6-xfs Configuration
Main Menu
Arrow keys navigate the menu. <Enter> selects submenus --->.
Highlighted letters are hotkeys. Pressing <Y> includes, <N> excludes,
<M> modularizes features. Press <Esc><Esc> to exit, <?> for Help.
Legend: [*] built-in [ ] excluded <M> module < > module capable
Code maturity level options --->
Loadable module support --->
General setup --->
Memory Technology Devices (MTD) --->
Parallel port support --->
Plug and Play configuration --->
Block devices --->
Multi-device support (RAID and LVM) --->
Networking options --->
Telephony Support --->
<Select> < Exit > < Help >
GLINK8.0 VT220 ECHO ROLL 015 016

For the UNIX/Linux environment Glink provides a choice of ANSI 3.64 or VTnnn emulation.

Glink is chosen wherever the users need more than just emulation.

Telecommunications companies are discovering that Glink is the ideal tool for remote control of equipment across TCP/IP networks, because its script language enables them to automate many routine tasks.



The VTnnn includes VT52, VT102, VT220, VT340 and VT420, including Regis graphics. It can be used with most industry standard mainframes as well as with DEC mainframes.

Some useful toolbar features

Glink has its own file display and directory navigation feature. You can copy, move, erase, rename, print and set attributes of files directly from Glink. Additionally you can move Glink around your directory structure, to pick up files to be uploaded, or position to where files will be downloaded.

You can start a Glink script to eliminate tedious repetitive tasks, or add user-friendly interfaces to legacy applications. Scripts can be used for pre-programming dialog, initiation of file transfers and initiation of other Windows applications.

You can automatically generate a script by starting the 'learn' feature. Your interactive work will be monitored, and when you are finished with the sequence the 'escape' key turns off the learn feature, stores the generated script and then guides you through assigning it to a toolbar button if desired.

The file transfer menu offers a wide choice of industry standard protocols: Kermit, Xmodem, Ymodem, Ymodem-batch, Ymodem-G, Modem-7, Telink and Zmodem. Bull users with Direct GCOS Access are offered UFT.

The powerful Glink FTP client has a Graphical User Interface that displays the mainframe's file system in the familiar Windows formats with a choice of icons, small icons, list or details. You can navigate freely in the local and remote file systems, and drag and drop files between them.

In addition to the standard file transfer protocols, Glink offers a simple text capture option. When you turn this on all plain text received from the mainframe will be captured on the file, as well as being displayed on the screen.

Glink's print screen function can select the current Windows default printer, start with the Windows printer and keep it for the session, ask you to select a printer the first time you print in a session or select a fixed printer. The GUI printer configuration options give an optimal hard copy.

The Glink 'dump screen' function writes a plain text snapshot of the screen to a file. You can move in the directory structure, and select an existing or a new file. You can choose to start each screen image with a form feed, and suppress any trailing blank lines on the screen.

Glink has its own line monitor. It records communications traffic in a debug window. Our support can play back debug files into a test Glink, to reproduce any problems reported from the field, and our developers can test their corrections to be sure that they fix your problem.

You can have up to 32.766 pages of scroll-back buffer. You can edit the buffer to delete uninteresting sections, you can set bookmarks and you can add annotations. You can copy, print, save, e-mail or transmit to the mainframe any marked section of the scroll-back.

The dial directory can be password protected and encrypted, and contains up to 999 entries. Entries can have your userid and password, terminal mode and even a startup script. Entries can use IP addresses rather than telephone numbers, making it useful for TCP/IP users.

Line-control functions include: connect, disconnect and break. You can also display the connection menu, enter local mode while retaining the connection, display the time you have been on-line or display the line buffer to see exactly what you have sent and received.

All the Glink features are available as functions that can be assigned to a keyboard combination, an icon on the toolbar or a button on the keyboard toolbar. Additionally Glink has 1000 macros that you can define to give local or mainframe functionality, and these too can be assigned in the same way. Glink is unique in that macros can start Glink scripts, and thus any keyboard combination or button in any toolbar can start a script and open a whole world of extra functionality for the user. This makes Glink ideal for enhancing access to your strategically important, even vital, legacy systems and increasing the productivity of your users who still access them.

Communications

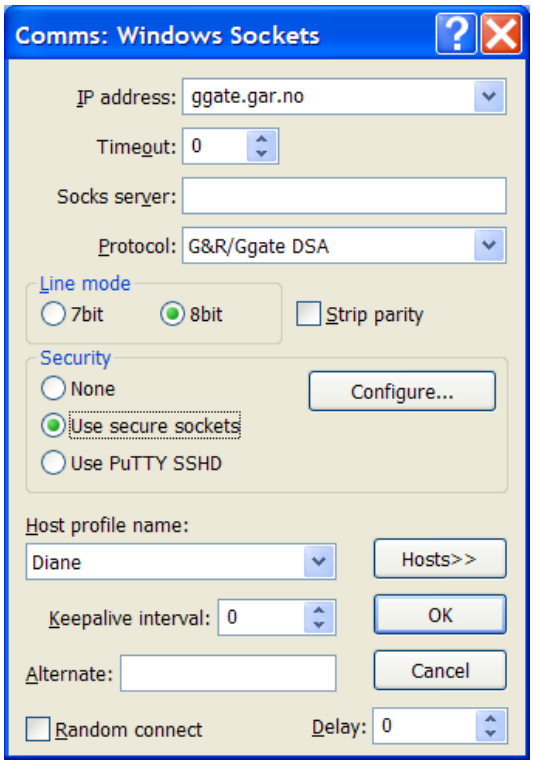
G&R/Direct GCOS Access (DGA)

For the Bull environment Glink Professional Edition supports the G&R/Direct GCOS Access (DGA) protocol, connecting Glink directly to Bull mainframes without the need for a front-end or gateway.

A need for load balancing, backup and recovery or for secure connections might lead you to select G&R/Ggate (see below); but if you want to make your connections in native Bull internal protocol, direct from your workstation across the TCP/IP network to the RFC1006 port on the mainframe, without involving any front-end or gateway at all, then Direct GCOS Access is what you need.

G&R/Direct GCOS Access turns your workstation into a fully functional Bull network node in its own right. It supports DSA200 for GCOS7 systems, DSA300 for GCOS6 systems and GCOS8 Time Sharing, and CXI for GCOS8 TP8 systems.

G&R/Ggate DSA gateway



For the high performance, high availability Bull environment Glink Professional Edition supports the G&R/DSA gateway protocol, connecting Glink to Bull mainframes via one or more G&R/Ggate gateways, optionally with load balancing and license sharing provided by G&R/Gproxy. The connections between your workstations and Ggate can be secured with a choice of the Secure Socket Layer or Secure Shell encryption and authentication protocols.

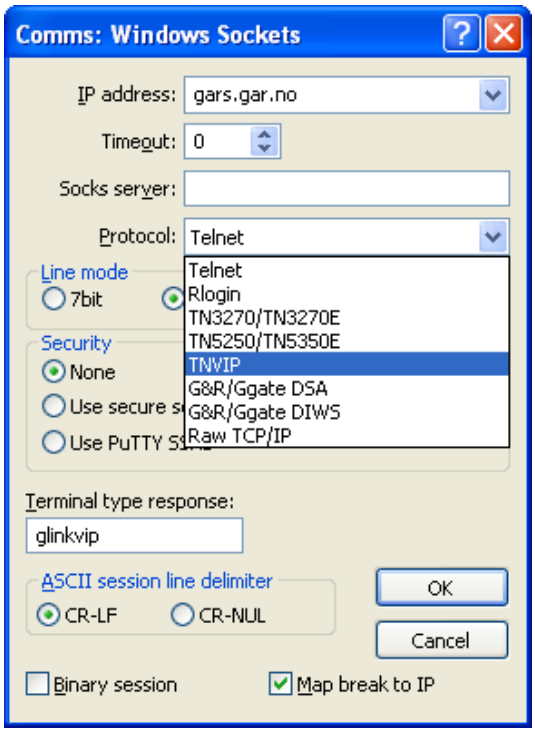
G&R DSA gateway protocol is by far the most efficient TCP/IP protocol for accessing Bull GCOS8, GCOS7 or GCOS6 mainframes. It maps directly into DSA, the GCOS internal protocol used by TP8, TSS, IOF, TDS and all other interactive GCOS applications, making G&R/Ggate the fastest and most efficient GCOS gateway on the market. Connectivity records:

UNIX server:
15.000 simultaneous sessions, 2.600 transactions a second
Windows server:
5.000 simultaneous sessions, 400 transactions a second

Ggate runs on UNIX, Linux and Windows server platforms making it uniquely scalable and adaptable in any network scenario.

Ggate is a standard feature of GNSP on GCOS8, and can be installed on GCOS7 Diane models. It offers far higher throughput than TNVIP or Telnet, and it is much more reliable as regards support of application-application dialog. Glink scripts, UVTI, OLE Automation and COM+ or .NET applications all work consistently when used with Ggate communications.

Telnet protocols



Telnet is the first and oldest TCP/IP terminal control protocol. It was originally defined in RFC854 back in 1983, to control a very primitive device, the NVT (Network Virtual Terminal).

Telnet is a byte stream protocol with the Telnet commands embedded in the data as escape sequences. Each side must merge its commands into the outgoing stream, and scan the incoming stream looking for Telnet commands.

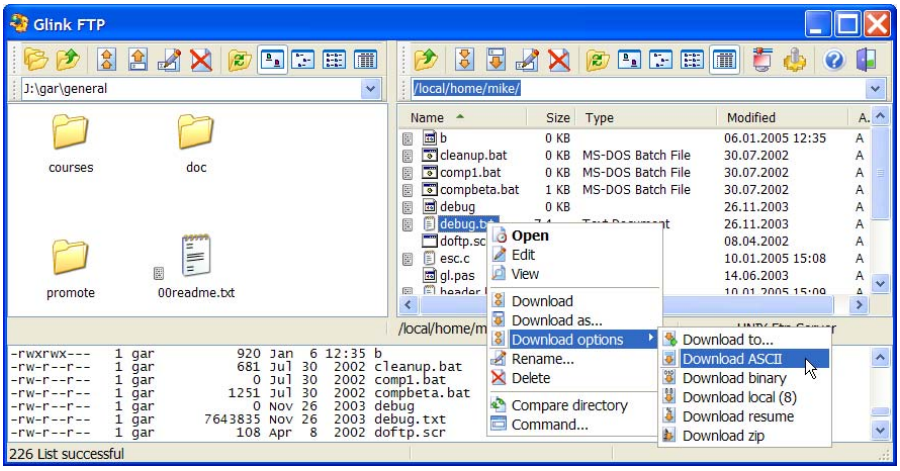
TNVIP, TN3270/TN3270E and TN5250/TN5250E are Telnet dialects. They are basically the Telnet byte scanning protocol, with options that help overcome some of the disadvantages of using a byte-stream oriented protocol, best suited to dumb echo mode terminals, to control an intelligent block mode terminal device.

They require that a Telnet server be on the mainframe side, scanning the incoming byte stream, and decoding Telnet protocol.

The connections between your workstations and mainframe can be secured with a choice of the Secure Socket Layer or Secure Shell encryption and authentication protocols.

FTP client

The Glink FTP client automatically detects the type of FTP server to which it is connected and converts between the FTP server and Windows directory formats. Local and remote directories can be displayed in any Windows format. Each directory window has its own toolbar.



Glink FTP supports drag and drop, or you can mark the desired file(s) in either directory and click the upload or download icon. File type is derived from the name extension, allowing transfer of multiple files in mixed ASCII and binary formats. The client supports directory download and compressed download.

Remote files can be viewed and edited using a configurable viewer and editor. Remote files changed with the editor are uploaded if the changes are saved. Your FTP file transfers can be secured with a choice of the Secure Socket Layer (SSL) or Secure Shell (SSH) encryption and authentication protocols.

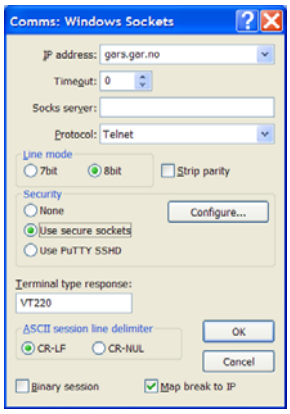
Security

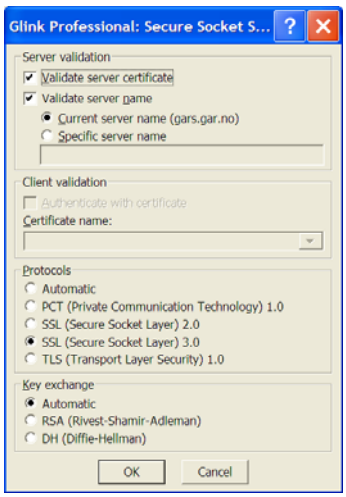
All Glink's TCP/IP communications protocols support a choice of the Secure Socket Layer or Secure Shell encryption and authentication protocols, giving you security on your Telnet, Rlogin, TN3270/TN3270E, TN5250/TN5250E, TNVIP and Ggate connections to your legacy systems.

Secure Socket Layer

Glink can be configured to use the Secure Sockets Layer (SSL) included in Microsoft's Secure Channel (SChannel) security package on all supported Windows releases to provide secure communications.

When using Glink, privacy is ensured by use of encryption on all Secure Socket connections. Additionally, X509 certificates from a trusted certificate authority can be used to authenticate the mainframe, the client or both.





You set SSL by checking the 'Use secure sockets' radio button in the 'Security' pane of the Windows sockets configuration dialog box. This gives you encryption using default values.

In the advanced settings you can configure authentication of the server, both by validating its certificate and validating that the server name is correct.

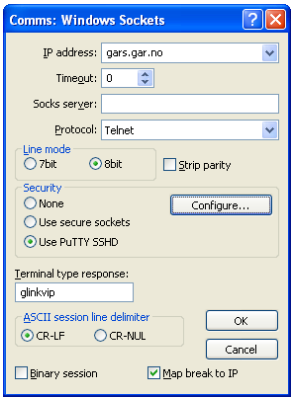
You can also choose to override the Automatic selection of security protocol and key exchange protocol.

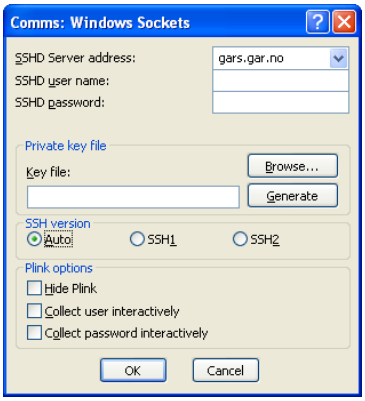
Secure socket connections presume an SSL server. If your server system does not have SSL support you can install a freeware package such as Stunnel to provide it.

Secure Shell

Glink can be configured to use the Secure Shell (SSH) included in the PuTTY Secure Shell freeware package using the plink module. The PuTTY software is truly freeware and is distributed under the MIT license, similar to BSD, and can therefore be included in Glink and other SSH clients.

When using Glink, privacy is ensured by use of encryption on all Secure Shell connections. You must have an SSH logon name and password for the SSHD server to which you connect.





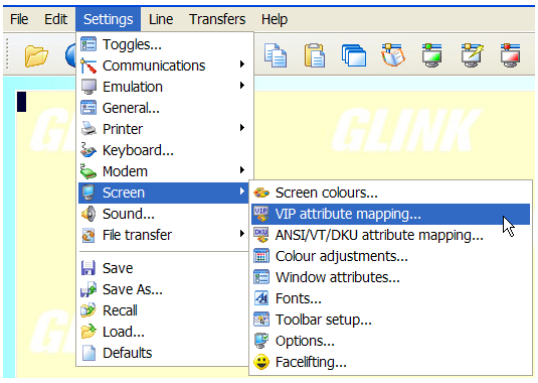
You set SSH by checking the 'Use PuTTY SSHD' radio button in the 'Security' pane of the Windows sockets configuration dialog box.

In the advanced settings you must configure the Secure Shell Daemon server address, and you can configure your name and password. If you would like to use Public Key authentication of your Glink you can store your private key in the file system, in which case the SSHD password can be used for the passphrase needed to access it. You can also choose to override the Automatic selection of security protocol and key exchange protocol.

Secure Shell connections presume an SSH server.

Complete configuration control

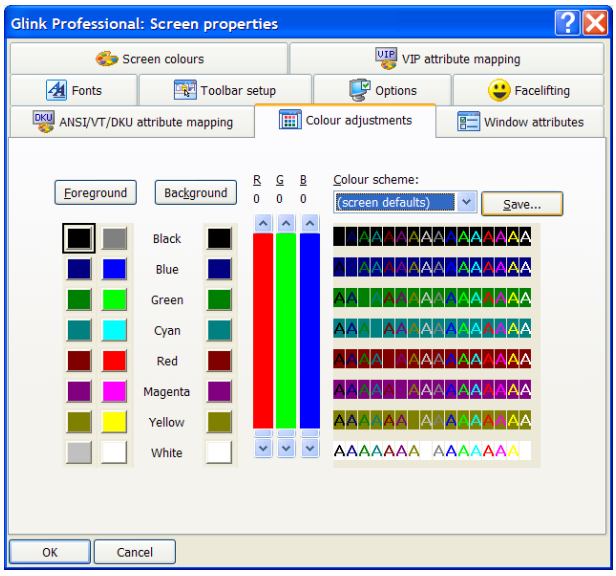
On the fly from Glink



Configuration is done from Glink itself. An administrator can use the configuration menus to produce configuration files for individual or groups of users, and these can then be locked to prevent user configuration problems. A network setup utility is included, and can be tailored by an administrator to allow users to install Glink from a file server, together with Glink program groups and icons adapted to the requirements of each user group. Alternatively the individual users can be allowed to install and configure their own Glink program groups and icons.

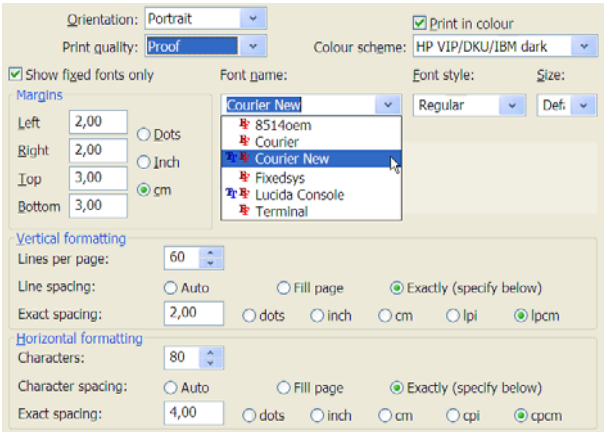
Each Glink icon can be assigned its own configuration file, so that users can be given a range of Glink icons on their desktop, each starting a separate Glink tailored to a specific mainframe connection or application.

Screen appearance



The screen appearance can be tailored for users or groups. Fonts, toolbars, Windows attributes and face-lifting features are all available from a single tabbed dialog box. Glink supports color, set by the legacy application for terminal types that support color, or mapped from other field attributes to brighten up the presentation of legacy application data. There are sixteen foreground colors and eight background colors to choose from. Each color can be adjusted as regards red/green/blue intensity in order to give the most attractive presentation. The color schemes can be given names and saved for later use, and can be selected for color printing.

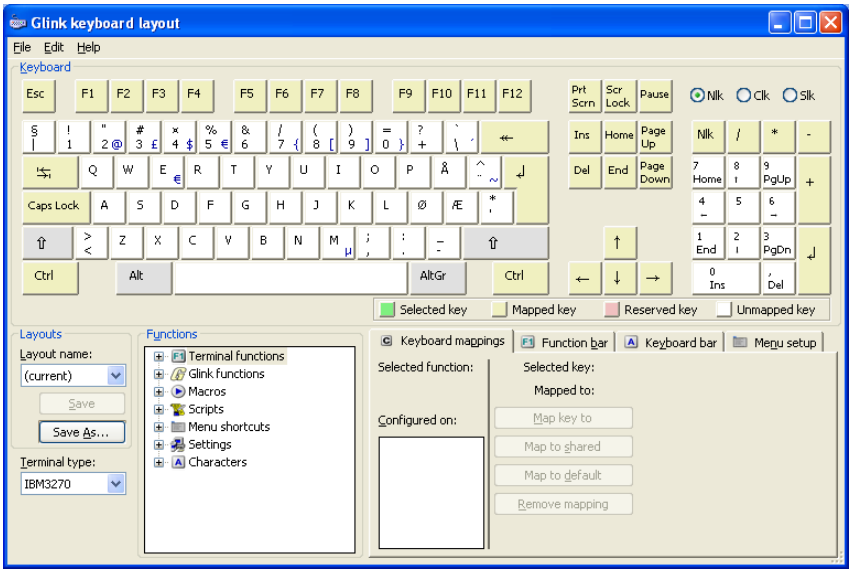
Printing



Glink offers complete control of printer configuration. Using the Windows graphical interface you can select left, right, top and bottom margins, select a font with style and size, and adjust vertical and horizontal formatting to exactly match the printer and paper you are using. You can also select color printing, and a color scheme from the standards we deliver, or composed by you. Glink also supports plain text printing of formatted legacy application print data.

Keyboard mapping

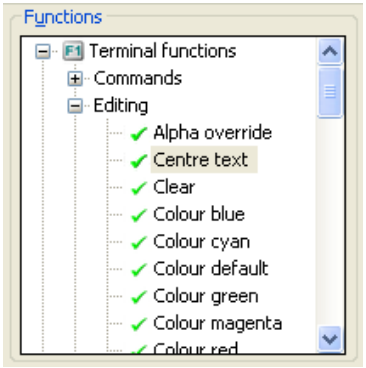
The graphical user interface to keyboard mapping provides both an extremely fast way of checking on which key combination a function can be found, and a powerful tool for customizing the keyboard for an individual user, group of users, or specific legacy application.



The physical layout is obtained from the keyboard driver, and thus adjusts itself to the national keyboard you are using. In this case a Norwegian keyboard. Note the ÆØÅ, the composing keys for accented characters, and that the right Alt key is an Alt Gr shift that selects the alternate graphic on the key tops.

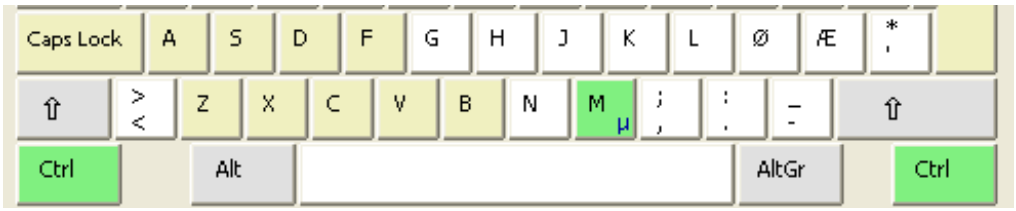
You can save your custom keyboard layouts with logical names, and load one on start-up, or as needed. Saved layouts can be shared with other users. A range of industry standard layouts is included for your convenience.

Open the function tree in the Function pane to access any function of the emulator. You can see immediately if the function is available from the keyboard by the checkmark.



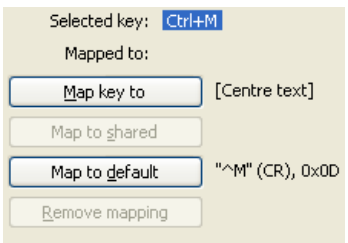
In the Keyboard mappings pane you can see the key combinations to which it is already assigned.

The function you have selected can now be dragged from the Function pane and dropped onto any key combination in the Keyboard pane. The ‘Centre text’ function in Glink’s 3270 emulation is by default on ‘Left Alt+C’, but you could drag it from the function tree and, while holding down the Control key, drop it on the ‘M’ key in the keyboard pane.



This would assign the function to Ctrl+M, which might make more sense to you if you speak Norwegian and ‘centre’ is ‘midtstille’.

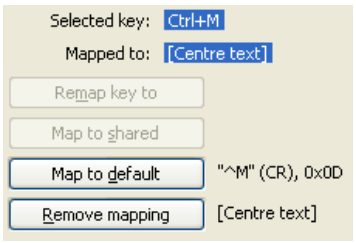
Vice versa, you could begin by selecting a keyboard combination, by simply clicking the control key and the target key. The present function of the key combination is displayed in the Keyboard mappings pane.



Because ‘Centre text’ is selected in the function tree it is offered for mapping by the ‘Map key to’ button. Clicking the button will map the function.

➔ ➔➔➔➔➔➔➔➔➔➔➔

Could keyboard configuration be easier or more elegant?

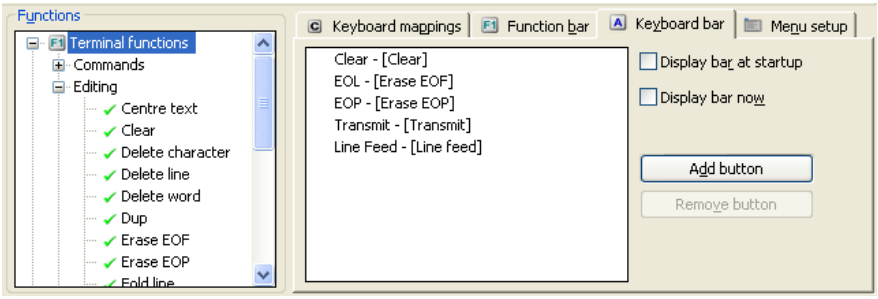


Increasing productivity

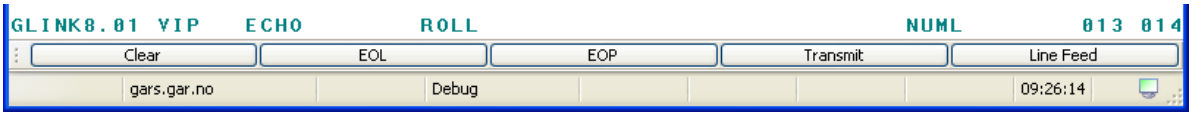
Glink provides you with simple and elegant ways of increasing productivity for users of legacy applications by allocating terminal functions, macros or scripts to the Menu line, Toolbar, Function bar, Keyboard bar or to hot-spot buttons generated automatically by the arrival of a configured text from the legacy application.

Function bar and Keyboard bar

You use the keyboard setup GUI to configure these optional button bars. By convention the Function bar is used for buttons that send control sequences to the application, while the Keyboard bar is used for buttons that have local editing or other functions, but this convention in no way restricts configuration of the two bars.

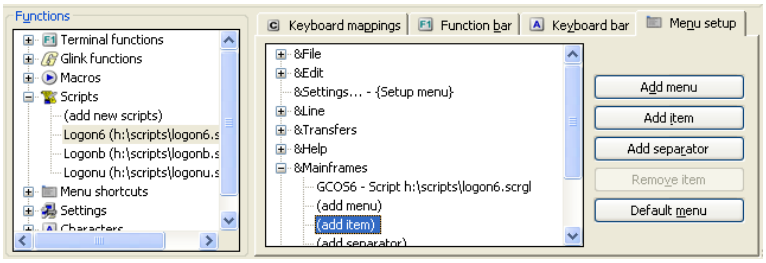


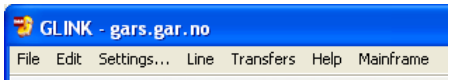
Here you see the keyboard bar. Any button is a target for drag-and-drop of a function from the Functions pane. You can assign any function to any button in either bar. Select any button in either bar, and with a second click you open the button text for editing, and can choose any text.



Menu setup

You use the keyboard setup GUI to configure this unique feature for adding your own items to the menu line.

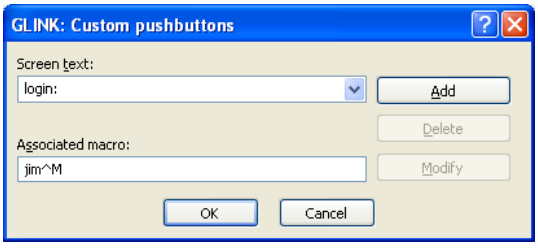


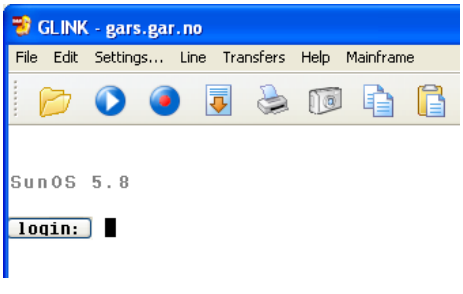


Here you see how a menu for mainframe logon has been added to the menu line, and an item added to that menu for logon using a script selected from the Functions pane.

Hot-spot buttons triggered by legacy application text

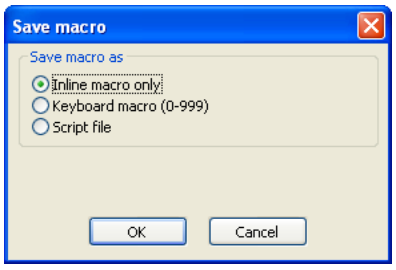
Very often legacy applications will offer menus requiring selection of a function using a function key. You can convert a menu text such as 'PF1' to a hot spot button that transmits the sequence for PF1 simply by checking an option in Glink's screen facelifting setup. You can go further and convert any arbitrary legacy application text to a hot spot button that executes a macro, and since any Glink macro can start a script you have a very powerful tool for increasing the productivity of users accessing your legacy applications. A simple example would be recognition of the login text, and a hot spot button to transmit your login name:





Defining and storing macros

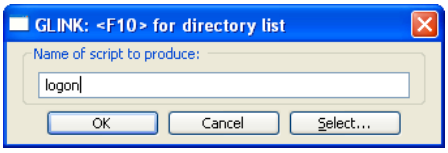
Macros are simple but very efficient accelerators in many situations. An easy and automatic way of obtaining a correct, working macro is to record your dialog with the legacy application. You turn on Glink's macro definition function in the edit menu at the point where you are about to begin the dialog that you will later replace with the macro. At the end of the sequence you turn it off in the same menu.



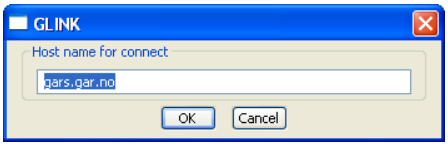
Turning off the macro definition triggers the Glink macro storage dialog box. You can save the macro as the current in-line macro, which makes it available for use at any time from the edit menu. You can save it in your keyboard configuration macro library, where there is space for storing 1000 macros. The macro can then be assigned to a keyboard sequence, Keyboard bar, Function bar or to a menu item. Finally you can save the macro as a script file. This stores the macro as a simple Glink script that delivers the same keyboard input as you did when you defined the macro.

Defining and storing scripts

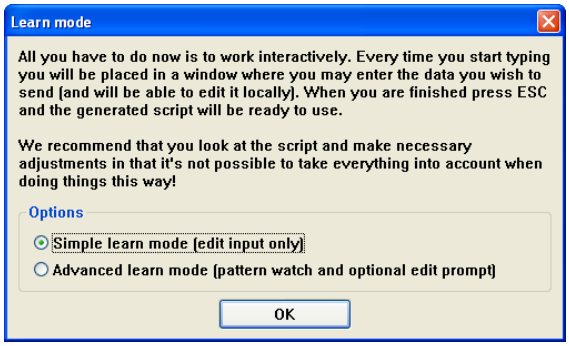
The Glink script language is a very powerful tool for increasing the productivity of users accessing legacy applications. The language has a wide range of features that make Glink unique in the emulator market as regards script functionality. You must compose complex scripts using a text editor, but you can accomplish many tasks that are too complex for a macro using an automatically generated script. You turn on the script definition feature using the 'Learn' icon in the Toolbar, or the 'Learn mode' entry in the Edit menu.



This triggers the script generation feature and you are requested to name the script. The script will be stored in your script directory if you have one, or otherwise in your Glink directory.



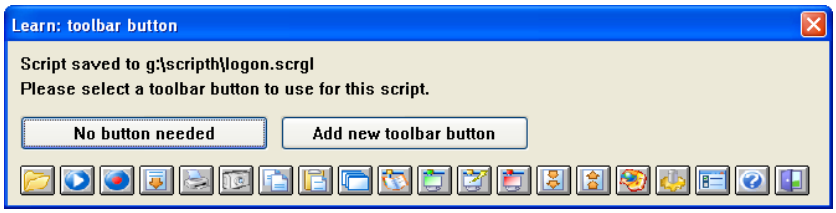
The script will begin by connecting if you are not already connected to the mainframe, and so you are requested to give the name for the connect, with a default of the mainframe in your current Glink configuration.


Learn mode
All you have to do now is to work interactively. Every time you start typing you will be placed in a window where you may enter the data you wish to send (and will be able to edit it locally). When you are finished press ESC and the generated script will be ready to use.
We recommend that you look at the script and make necessary adjustments in that it's not possible to take everything into account when doing things this way!
Options
Simple learn mode (edit input only)
Advanced learn mode (pattern watch and optional edit prompt)
OK

You choose between simple and advanced mode. Simple mode just records each of your input messages, but the prompt from the legacy application is remembered. This means that if unexpected legacy application messages are received your script will not reply until it sees the correct prompt

Advanced mode allows you to specify output messages as patterns that can be recognized, and trigger the same input each time. This is useful when the legacy application pages output with a given prompt, and needs an answer to continue.

You terminate learn mode with the Escape key, and this triggers a dialog that allows you to immediately assign your script to your toolbar if desired:


Learn: toolbar button
Script saved to g:\scripth\logon.scrgl
Please select a toolbar button to use for this script.
No button needed
Add new toolbar button

Regardless of your choice, the script is stored in your script directory, and from there can be assigned to a keyboard sequence, Keyboard bar, Function bar, or to a menu item.

Language support

Operating language

All operational text in Glink is in a separate language file, making it simple to produce a national language version. Glink is delivered with support for more than one operating language; we currently deliver: Finnish, French, German, Norwegian, United Kingdom and United States (other languages by agreement).

Mainframe language

Glink supports most mainframe languages, and can optionally use UTF8 for communication.

7-bit ASCII National character sets

Finnish	German	Swedish/Finnish	Swiss
French	Italian	Spanish	United Kingdom
French-Canadian	Norwegian	Swedish	United States

8-bit ISO Standard character sets

Latin-1 (Western Europe), Latin-2 (Central Europe), Greek, Cyrillic, Arabic, Turkish, Baltic, Vietnamese, Thai

EBCDIC National character sets

Austrian/German	Danish/Norwegian	French	Japanese English
Belgian	English UK	Icelandic	Portuguese
Brazilian	English US	International	Spanish
Canadian/French	Finnish/Swedish	Italian	

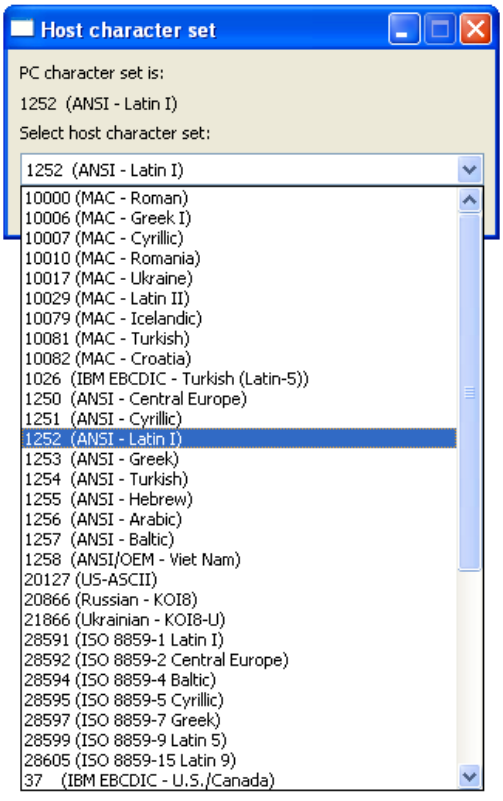
Double-byte language character sets

Chinese Simplified (using GB2312 locally)
Chinese Traditional (using Big5 locally)
Japanese (using SHIFT-JIS locally)
Korean (using Hangeul locally)

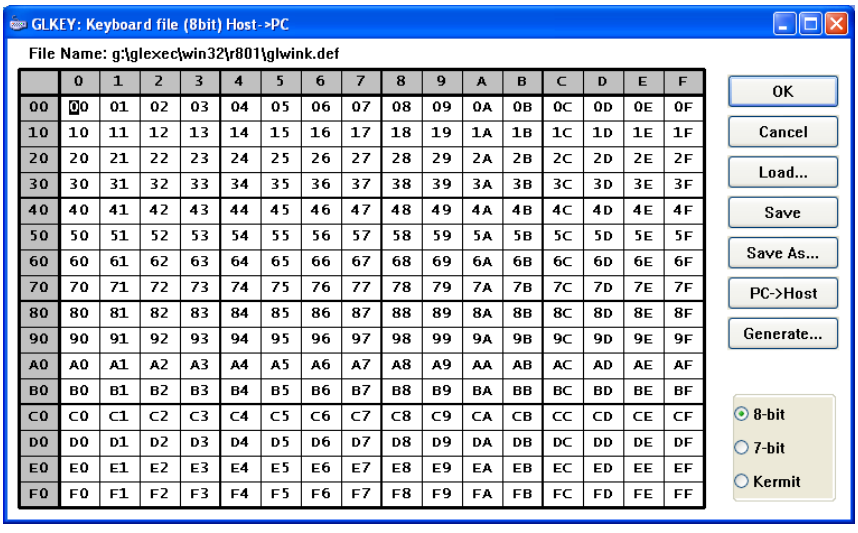
Other characters sets

Mainframes may also use any of the Windows, DOS or Mac character sets.

Transliteration tables

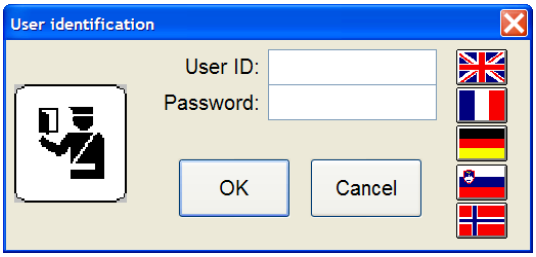

Host character set
PC character set is:
1252 (ANSI - Latin I)
Select host character set:
1252 (ANSI - Latin I)
10000 (MAC - Roman)
10006 (MAC - Greek I)
10007 (MAC - Cyrillic)
10010 (MAC - Romania)
10017 (MAC - Ukraine)
10029 (MAC - Latin II)
10079 (MAC - Icelandic)
10081 (MAC - Turkish)
10082 (MAC - Croatia)
1026 (IBM EBCDIC - Turkish (Latin-5))
1250 (ANSI - Central Europe)
1251 (ANSI - Cyrillic)
1252 (ANSI - Latin I)
1253 (ANSI - Greek)
1254 (ANSI - Turkish)
1255 (ANSI - Hebrew)
1256 (ANSI - Arabic)
1257 (ANSI - Baltic)
1258 (ANSI/OEM - Viet Nam)
20127 (US-ASCII)
20866 (Russian - KOI8)
21866 (Ukrainian - KOI8-U)
28591 (ISO 8859-1 Latin I)
28592 (ISO 8859-2 Central Europe)
28594 (ISO 8859-4 Baltic)
28595 (ISO 8859-5 Cyrillic)
28597 (ISO 8859-7 Greek)
28599 (ISO 8859-9 Latin 5)
28605 (ISO 8859-15 Latin 9)
37 (IBM EBCDIC - U.S./Canada)

A graphical interface is provided for automatically generating tables for transliteration from any mainframe character set to your PC character set, and building additional tables to meet your special needs.



Script language

Glink's comprehensive script language allows you to eliminate tedious repetitive tasks, or add user-friendly interfaces to legacy applications. Scripts can be used for pre-programming dialog, initiation of file transfers and initiation of other Windows applications. A script can be event driven, and can remain in the background until triggered by some event during the session, such as reception of a predefined string or keyboard action. A script can feed keystrokes into the emulator, display directly on the screen, send directly to the communications line and interact with the user using dialog boxes and menus. Scripts can be initiated by the user, the legacy application or by separate Windows applications using an OLE link. The script language includes mathematical and string manipulation functions, file-handling functions and file transfer handling functions, as well as the expected interaction functions for dialog with the legacy application.

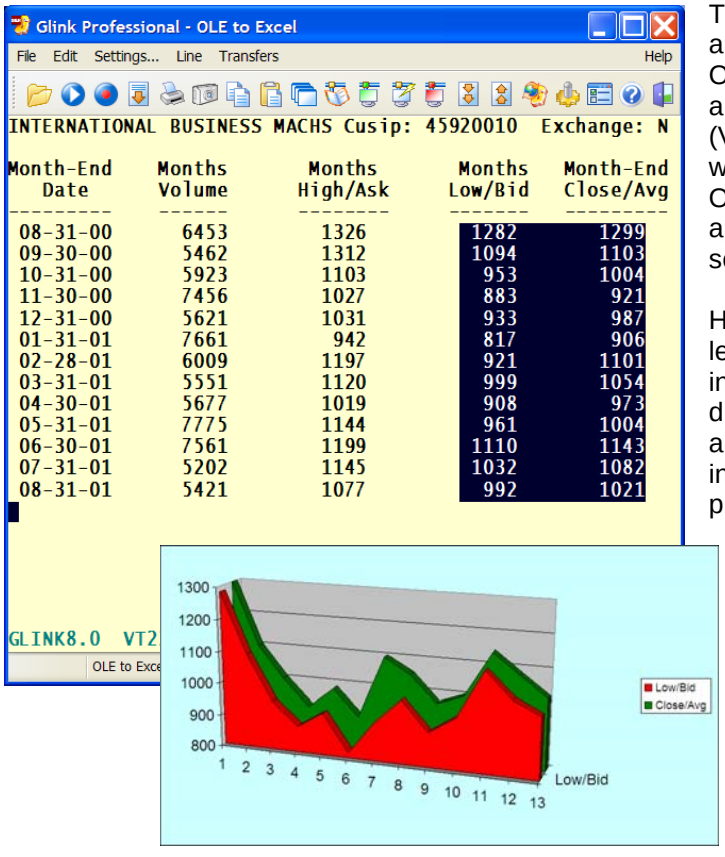


A unique feature of Glink's script language is direct support for Windows dialog boxes. Your script's dialog with the user can include any feature of Windows dialog boxes, including push buttons, radio buttons, input fields, drop-down selection lists, list boxes and, of course, images. In the dialog box shown here the flags are push buttons, and cause the script to change language.

VBScript and JScript

Glink can launch Visual Basic or JScripts in exactly the same way as it launches Glink scripts. Glink passes its Glink.GlinkAPI and Glink.Auto objects to the ScriptControl, which can then use the interface to interact with the Glink session. See below for GlinkAPI and Auto.

OLE automation controller



The Glink script language has an OLE automation interface that allows it to act as an OLE automation controller and drive any OLE automation server using Visual Basic Application (VBA) syntax. Servers that can be driven in this way include Word, Excel and other Microsoft Office programs, as well as user-written applications that supply OLE automation services.

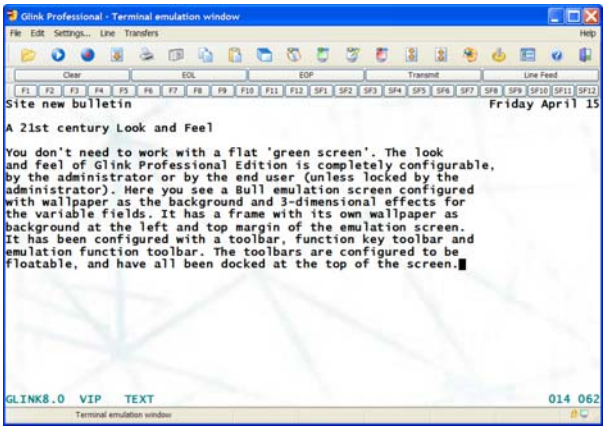
Here a Glink script has started Excel, pasted legacy application data from the Glink screen into a worksheet, and then requested Excel to display the data graphically. This is all done automatically from the Glink script, with no user intervention. A script can use all the functionality provided by the Excel.Application object.

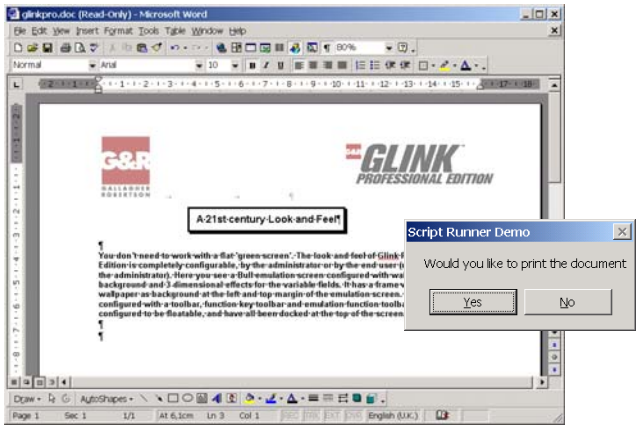
Application Programming Interfaces

OLE automation server

The Glink.Auto object makes Glink into an OLE automation server. All Microsoft Office applications, including Word and Excel, that support the Visual Basic Application language (VBA) are able to act as OLE automation controllers and drive Glink as an OLE automation server. Your own VBScripts or JScripts launched from your applications or desktop can also use Glink.Auto. Note that Glink itself can launch your VBScripts or JScripts, and passes Glink.Auto to the ScriptControl, allowing your script to interact with the Glink session that launched it.

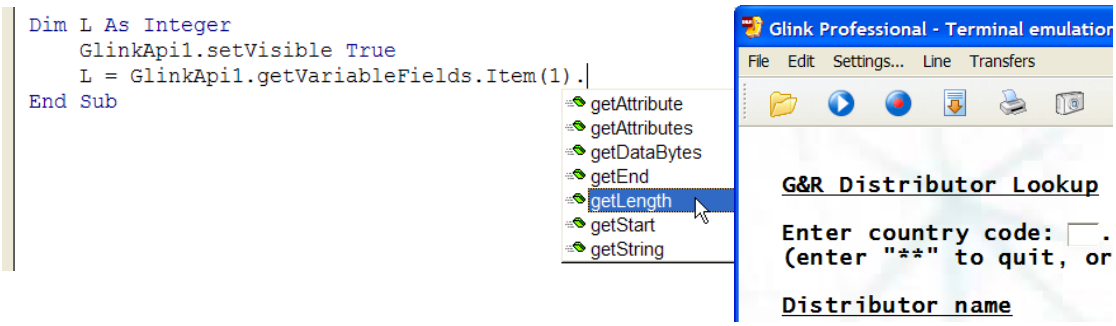
In this extremely impressive demonstration Glink has been used to start a VBScript. The VBScript takes control, and drives Glink using the Glink automation server, and also drives a copy of Word using the Word automation server. The VBScript is able to pick up information from the Glink screen, transfer it into Word, format it, and even, as here, print the results.


Glink Professional - Terminal emulation window
Site new bulletin
Friday April 15
A 21st century Look and Feel
You don't need to work with a flat 'green screen'. The look and feel of Glink Professional Edition is completely configurable, by the administrator or by the end user (unless locked by the administrator). Here you see a Bull emulation screen configured with wallpaper as the background and 3-dimensional effects for the variable fields. It has a frame with its own wallpaper as background at the left and top margin of the emulation screen. It has been configured with a toolbar, function key toolbar and emulation function toolbar. The toolbars are configured to be floatable, and have all been docked at the top of the screen.
GLINK8.0 VIP TEXT
014 062



Component Object Model and .NET

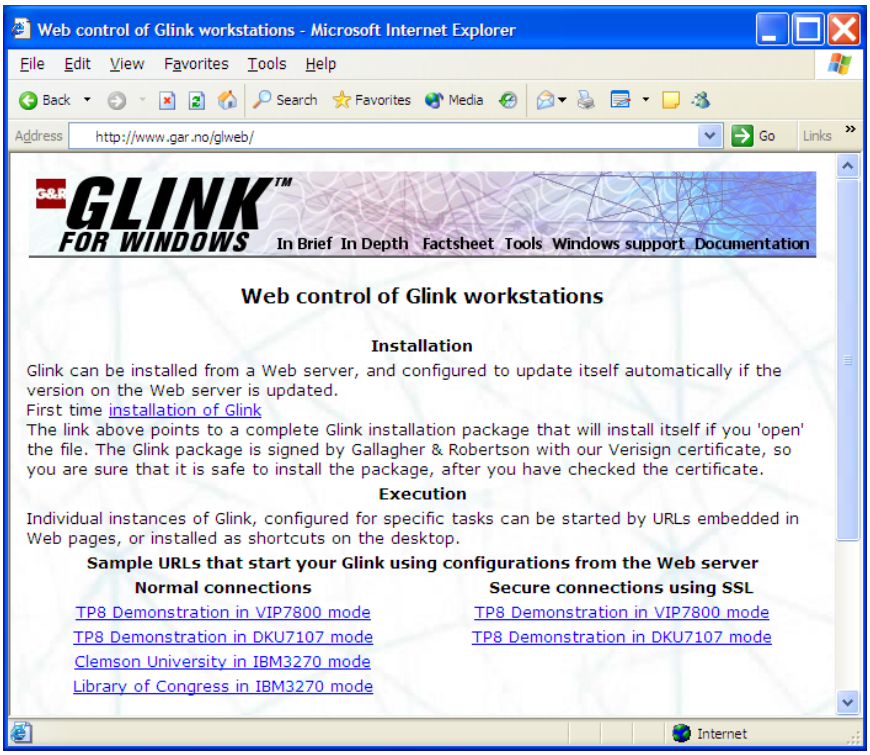
Glink provides a COM+ component, Glink.GlinkAPI. All visual development tools (Visual Basic, Visual C, Visual Java, etc.) recognize the Glink COM+ component, and are able to display the interface to the developer. Each legacy application screen becomes addressable as a collection of field objects, or as a string. Your developers can deliver keystrokes and can set up event handlers that will call back the client application when the given event occurs (connect, disconnect, turn, reception of a specified string or keyboard sequence). A compatible Java version of the component is available with G&R/Glink for Java.



Glink Professional Edition licenses are per workstation, and allow a Glink.GlinkAPI application to open up to five simultaneous sessions with legacy applications. For server side application development with more sessions you need an Enterprise Edition license. A .NET version of the API is available for server-side development, as explained below in section "**Glink on the application server**".

Web control of Glink workstations

A Glink Enterprise Edition installation can be completely controlled from a web server.


Web control of Glink workstations - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://www.gar.no/glweb/
Go Links
GLINK FOR WINDOWS
In Brief In Depth Factsheet Tools Windows support Documentation
Web control of Glink workstations
Installation
Glink can be installed from a Web server, and configured to update itself automatically if the version on the Web server is updated.
First time installation of Glink
The link above points to a complete Glink installation package that will install itself if you 'open' the file. The Glink package is signed by Gallagher & Robertson with our Verisign certificate, so you are sure that it is safe to install the package, after you have checked the certificate.
Execution
Individual instances of Glink, configured for specific tasks can be started by URLs embedded in Web pages, or installed as shortcuts on the desktop.
Sample URLs that start your Glink using configurations from the Web server
Normal connections
TP8 Demonstration in VIP7800 mode
TP8 Demonstration in DKU7107 mode
Clemson University in IBM3270 mode
Library of Congress in IBM3270 mode
Secure connections using SSL
TP8 Demonstration in VIP7800 mode
TP8 Demonstration in DKU7107 mode
Internet

By placing a Glink self-extracting installation package on a web server, an organization can completely automate delivery and installation of Glink to their users. The delivery and installation process is completed without end-user intervention, other than initiation of download and installation by clicking a URL, and accepting the installation security warning. The installation package is packed and signed by G&R with our digital signature to ensure integrity.

Copies of Glink installed in this way are automatically updated each time the system administrator makes a new version of Glink available on the web server. Glink itself checks each time that it is started that it is at the same level as is currently available on the web server, and if not, initiates the download and installation process for the new version.

Command files, prepared by the administrator and resident on the web server, are used to start web-controlled Glink. The command files point to the associated configuration files, also on the web server. The system administrator builds the command and configuration files necessary for each type of mainframe connection needed by the user groups.

The command file also sets the script directory, again resident on the web server, containing all the scripts available to the Glink instance controlled by the command file. The command file may also initiate a start-up script that is executed when the user starts the Glink controlled by the command file. The start-up script can simply logon to the target application, eliminating time-consuming interactive logon dialog, or it can set event handlers for patterns in the application data, and/or keyboard keys, then wait in the background, ready to handle the events, increasing the functionality of Glink in the application context.

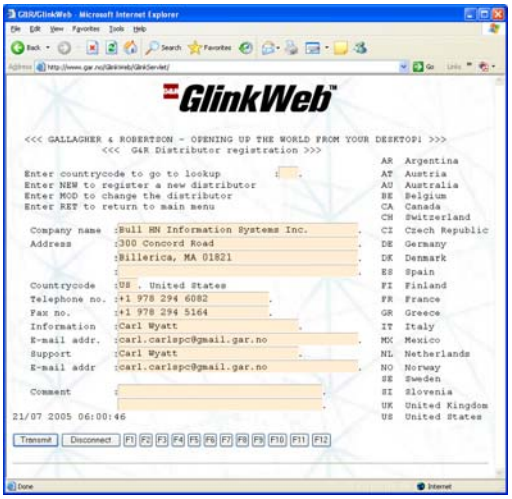
Web controlled copies of Glink can be initiated by URLs in web pages, by URLs embedded in desktop icons, or by URLs executed from within other applications.

GlinkWeb, Glink on the web server

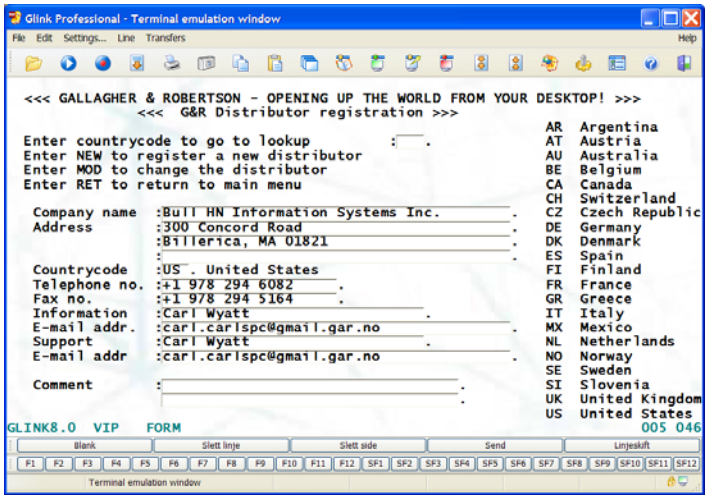
GlinkWeb

The Enterprise Edition of Glink includes GlinkWeb. GlinkWeb is a separate package that is installed and executes on the web server. Application screens are mapped to HTML 'on-the-fly'. Browser users see automatically facelifted screens in their browser window, giving them 'terminal like' access to legacy applications. Web enabling using GlinkWeb needs no changes whatsoever to the legacy applications. Once GlinkWeb is installed on the web server, browser users can be given access to any legacy application.

GlinkWeb



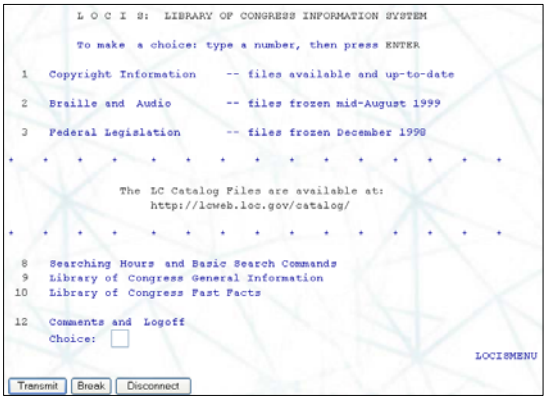
Glink for Windows


Glink Professional - Terminal emulation window
<<< GALLAGHER & ROBERTSON - OPENING UP THE WORLD FROM YOUR DESKTOP! >>>
<<< G&R Distributor registration >>>
Enter countrycode to go to lookup :
Enter NEW to register a new distributor
Enter MOD to change the distributor
Enter RET to return to main menu
Company name :Bull HN Information Systems Inc.
Address :300 Concord Road
:Billerica, MA 01821
Countrycode :US . United States
Telephone no. :+1 978 294 6082
Fax no. :+1 978 294 5164
Information :Carl Wyatt
E-mail addr. :carl.carlspc@gmail.gar.no
Support :Carl Wyatt
E-mail addr :carl.carlspc@gmail.gar.no
Comment :
GLINK8.0 VIP FORM
005 046
Terminal emulation window

A set of client side Java scripts activates the HTML forms to do user input editing field controls such as numeric only, must enter, and must fill. Additionally they provide automatic tabulation to the next field when the current field is filled. The Java scripts also provide terminal-like keyboard functionality, giving the expected functions to keys such as HOME, TAB, cursor up and cursor down, rather than the default actions of the browser.

GlinkWeb facelifting

You do simple facelifting with parameters; for a given application you can design a login page, disconnect page and a master template for presentation of the legacy application screens, setting your own headers, footers, wallpaper and the function keys you would like as pushbuttons in the page. You do advanced facelifting using the GlinkWeb Forms Assistant to generate an ASP.NET Web Form (ASPX) for each legacy application screen. You then use the Interactive Development Environment (IDE) of your choice to modify these pages to completely change the look and feel of your legacy systems. You can produce simplified views of complex legacy applications, or combine functions from several legacy applications into a new web application. Using the functionality of ASP.NET Web Services support, you can even transform legacy applications into Web services.

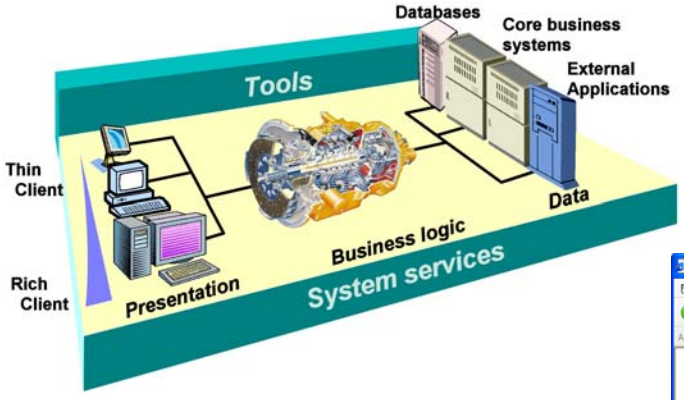

L O C I S: LIBRARY OF CONGRESS INFORMATION SYSTEM
To make a choice: type a number, then press ENTER
1 Copyright Information -- files available and up-to-date
2 Braille and Audio -- files frozen mid-August 1999
3 Federal Legislation -- files frozen December 1998
The LC Catalog Files are available at:
http://lcweb.loc.gov/catalog/
8 Searching Hours and Basic Search Commands
9 Library of Congress General Information
10 Library of Congress Fast Facts
12 Comments and Logoff
Choice:
LOCISMENU
Transmit
Break
Disconnect

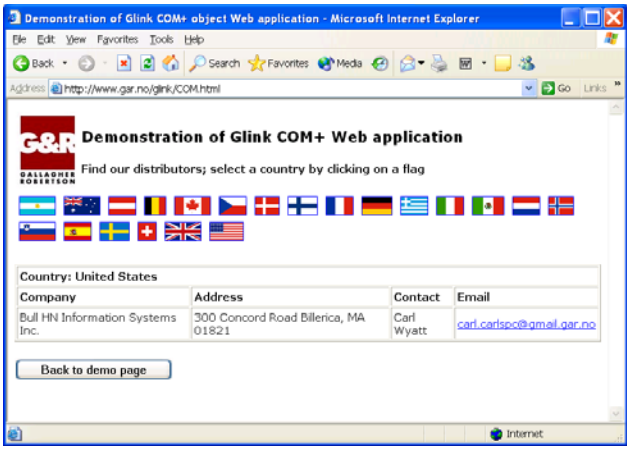
Completely transform a legacy application

Glink on the application server

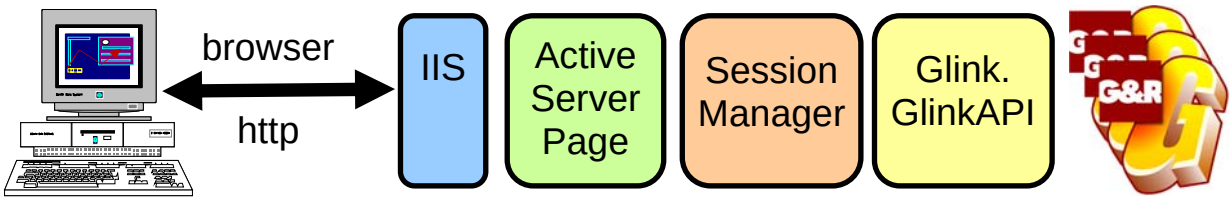
Glink API for server side applications

Glink provides you with an API (Application Programming Interface) that is ideally suited for application development using three-tier architectures. This architecture uses 'thin' clients (usually browsers) that only do presentation. The business logic of the application runs on an Application server. The interface between the client and the application is an Active Server Page or ASP.NET Web Form page. Glink's API provides this new middle-tier business logic with access to vital legacy systems running on mainframes. Using the functionality of ASP.NET Web Services support, you can even use Glink.GlinkAPI to transform legacy applications into Web services.




Demonstration of Glink COM+ object Web application - Microsoft Internet Explorer
Demonstration of Glink COM+ Web application
Find our distributors; select a country by clicking on a flag
Country: United States
Company
Address
Contact
Email
Bull HN Information Systems Inc.
300 Concord Road Billerica, MA 01821
Carl Wyatt
carl.carlspc@gmail.gar.no
Back to demo page

You use the Glink.GlinkAPI .NET component to develop server side applications, launched from Active Server Pages (ASP) or ASP.NET Web Form (ASPX) pages.



Your server side application needs a Glink Enterprise Edition license to start as many simultaneous sessions as are licensed. An optimized Glink.GlinkAPI .NET component using much less memory increases the number of simultaneous sessions that can be supported on production systems. The Glink component can be a session object belonging to the specific client that launched it, or it can be an application object, shared by all clients using the same ASP/ASPX.

Note that G&R provide a compatible API with Glink for Java Enterprise Edition. Glink for Java Enterprise Edition, with the Java version of the API is designed to give the same three-tier architecture development capability in the cross-platform Java environment. It can be used with any web server that supports Servlets, and also with full-blown J2EE compatible application servers such as BEA's WebLogic.

Glink for Windows summary

Glink Professional Edition

Glink Professional Edition is licensed by workstation. The license must cover the number of workstations on which it is installed, regardless of usage pattern. ***Glink Professional Edition*** has Bull VIP7700, VIP7760, VIP7800, VIP8800, DKU (Questar), IBM 3270, 5250, 3151 and also *VTnnn*, *ANSI* and *Minitel* emulations. ***Glink Open Professional Edition*** has *VTnnn*, *ANSI* and *Minitel* emulations.

The Professional Edition includes the Glink.GlinkAPI COM+ component used by workstation COM+ or .NET applications to access legacy applications running on mainframes. It can also be installed on a server, and used for development and small-scale testing of server-side applications. Support of many simultaneous sessions in a production environment requires an Enterprise Edition license.

Glink Enterprise Edition

The Enterprise Edition is licensed by number of simultaneous sessions. It is used when deploying server-side applications developed using the Glink Professional Edition Glink.GlinkAPI COM+ component in your ASP or ASP.NET environment. There are two packages, ***Glink Enterprise Edition***, and ***Glink Open Enterprise Edition***, with emulations as described above for the Professional Edition.

Glink Enterprise Edition includes ***GlinkWeb***, which web-enables legacy applications, making them available to end-users having only a standard browser installed on the desktop. GlinkWeb requires no changes to the legacy applications, and no installation of workstation software other than the browser. The Enterprise Edition also includes **web-controlled workstation mode**, allowing you to run Glink on your workstations, installed by, and under control of, a web server.

Glink facts and figures

Emulations:
Bull VIP7700/7760/7800, Bull DKU7107/7211, Bull DKU7102, IBM 3270 with GDDM graphics, IBM 5250; IBM 3151, VT/52100/220/340/420 with Regis graphics, ANSI, Prestel & Minitel

Communications:
TCP/IP: G&R Direct GCOS Access, G&R Ggate, TNVIP, TN3270E, TN5250E, Telnet, raw TCP/IP
X25: Atlantis, Cirel, Eicon
Serial: Windows Serial and Telephony

Security: Secure Socket Layer (SSL/TLS) Secure Shell (SSH)

File Transfer: FTP, IND$FILE, Bull UFT, MICROFIT, FTRAN, GKRM, Kermit, Xmodem, Ymodem, Ymodem-batch, Telink, Modem-7, Zmodem and ASCII text capture

Script Language: Comprehensive platform-independent script language with over 250 commands

Programmatic Interfaces:
COM+, .NET, OLE Automation, UVTI, HLLAPI and DDE

Features:
- **Macros:** 1000 user-defined macros
- **Scroll-back:** 32.766 pages of scroll-back
- **Mainframe directory:** password protected and encrypted. 999 entries

Customization and facelifting:
- **Screen:** Optional frame, and wallpaper for screen and frame. Optional menu bar, status bar, caption bar, toolbar, keyboard bar and function bar. Optional toolbar tips
- **Hotspot function keys:** 'PFn' or arbitrary text detected and displayed as buttons
- **Resize choice:** Change screen size, keep size and add scroll bars, adjust font to fit
- **Fonts:** choice of built-in or Windows fonts.
- **Color:** sixteen foreground and eight background adjustable colors. Schemes can be named and saved
- **Keyboard:** GUI allows any internal function, terminal control sequence or a macro to be assigned to any key
- **Print:** adjust font, orientation, horizontal and vertical spacing, margins and color scheme. Transparent option for mainframe formatted print
- **Emulations:** Color and attribute mapping for all emulations

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